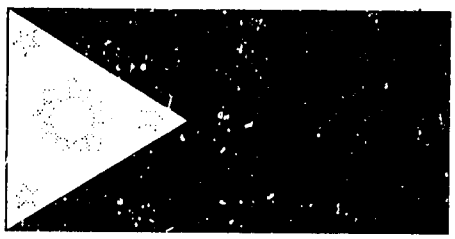
Executive Summary



Private Power Development in the Philippines

prepared for

National Power Corporation
Republic of the Philippines

a report of the

U. S. Agency for International Development, Office of Energy and Infrastructure
and
the Philippines Mission

prepared by

Energy Technology Innovation Project
Bechtel Corporation, Prime Contractor

Contract Number: DHR-5741-Q-00-1062-00
Project Number: 492-0458-3-00-218

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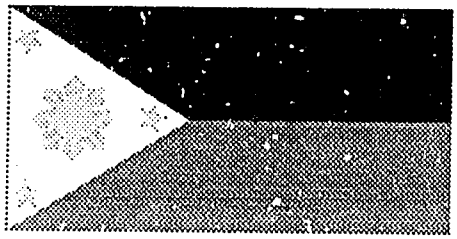

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REPORT DISCLAIMER

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BACKGROUND

On July 10, 1987, the government of the Philippines enacted Executive Order 215 (EO 215), which authorized private sector participation in power generation in the Philippines. Rules and regulations implementing this order were subsequently drafted and issued in May 1989. As with most private power models in developing countries, the government's was patterned after the successful United States program. The program encourages power purchases from unsolicited private power projects, provided that they produce net foreign exchange savings for the Philippines. These savings were expected to come from more efficient and/or cheaper power generation, use of indigenous fuels or renewable resources, or lower plant costs.

However, the Philippine program also envisaged a more ambitious role for the private sector, including financing, building, owning, and operating many of the projects identified as part of the National Power Corporation (NAPOCOR) generation resource plan. For these projects, NAPOCOR solicited proposals through a request for proposals (RFP) process in which bidders would compete to supply power on a build-operate-transfer (BOT) basis. Upon successful award, bidders were expected to sign NAPOCOR's "BOT Energy Conversion Agreement." This agreement commits bidders to produce power for sale to NAPOCOR at contractually specified prices from NAPOCOR-supplied fuel.

NAPOCOR is considering other strategies to encourage private sector involvement in power generation. A variation on BOT for new power projects is build-own-operate (BOO), which differs primarily in that final project ownership remains in the private sector. NAPOCOR is also considering the sale of some of its existing generating plants as well as increased cooperation with non-NAPOCOR power producers through wheeling and the provision of backup power.

The Order 215 program has met with mixed success. This is due in large part to the inherent complexities of international private power projects in developing countries. The program has only two operational power projects to use as a model: Shajiao B in China and the Navotas project in the Philippines. Although Navotas is testimony to the commitment of the government to private power, it falls far short of the government's expectations.

The retrenchment of many traditional commercial bank project lenders in the face of recessionary trends and new international

standards for higher capital reserves will make project developers and financiers even more selective in their pursuit of private power opportunities in the future. Successful private power implementation will require that the Philippine government structure its program to attract credible participants.

NAPOCOR's lack of success in implementing power privatization for new projects threatens to undermine the credibility of the Philippine program and exacerbates the current serious power supply shortfall. NAPOCOR has been held responsible for these failures, but the lack of BOT success in Turkey, Pakistan, and other developing countries indicates that the fault may lie elsewhere.

Attainment of power privatization objectives will require a consensus in a viable program tailored to the requirements of project developers and financiers. However, a viable program is not enough. NAPOCOR must effectively market these program opportunities to project developers through requests for proposals (RFPs).

With this objective, NAPOCOR requested United States Agency for International Development (USAID) assistance. This effort was directed and cosponsored by the USAID Mission in Manila and the AID Office of Energy and Infrastructure and was performed by Bechtel Corporation (Bechtel) under the Energy Technology Innovation Project. This assistance took the form of developing:

- A build-operate-transfer framework to guide NAPOCOR and government decisionmakers in evaluating the implications of private power policy and program choices
- Necessary methodologies to accommodate third-party private power transactions, including backup power rates, wheeling rates, and avoided cost prices
- An evaluation methodology (expanded from a previous USAID assignment performed by Bechtel) for evaluating and ranking BOT projects
- A conceptual framework for assessing privatization of existing NAPOCOR power plants

Given the limited private power experience in the Philippines it is not possible to generalize a formula for project success. Nevertheless, the consultant has based its study findings and recommendations on extensive experience with other LDC private power programs, on first hand observations of the Philippines

program, and on discussions with Philippine public and private sector program participants. The nature of the study does not lend itself to quantitative validation, so the recommendations are offered as the opinions of the consultant. Nevertheless, the consultant has attempted to remain objective in execution of this assignment.

PRIVATE POWER DEVELOPMENT FRAMEWORK

Credible business opportunities attract credible project participants: therein lies the key to project success. In designing its private power program, NAPOCOR has not fully recognized the requirements of a startup industry and the unique requirements of private power development in a developing economy, the Navotas project notwithstanding. NAPOCOR must start with a credible project opportunity, and then effectively market the opportunity through RFPs.

Some elements of the United States model can be used. While not uncriticized, programs implemented at the state level have been largely successful in encouraging the widespread development of nonutility power generation. The key to success was an understanding of what project participants required as an inducement to commit limited equity to what they perceived as high-risk, long-term development prospects in a startup industry.

Similarly, NAPOCOR must tailor its program to key project participants to elicit widespread private sector participation. This approach is captured in the concept of a "private sector decision model," which is a conceptual framework for assessing the decision process among potential project sponsors in the private sector. This model allows the assessment of the implications of its private power policies and program design. Where appropriate, policies can be modified to accommodate the needs of the private sector. A general private sector decision model is shown in Figure 1 and consists of the following elements:

- **Macro-Assessment.** A macro-assessment is an evaluation of nonproject-specific elements of a business opportunity. Country and client considerations are an integral part of any project evaluation. These considerations may be limiting factors in eliciting significant private sector interest in power projects, and such constraints would be identified in the macro-assessment.

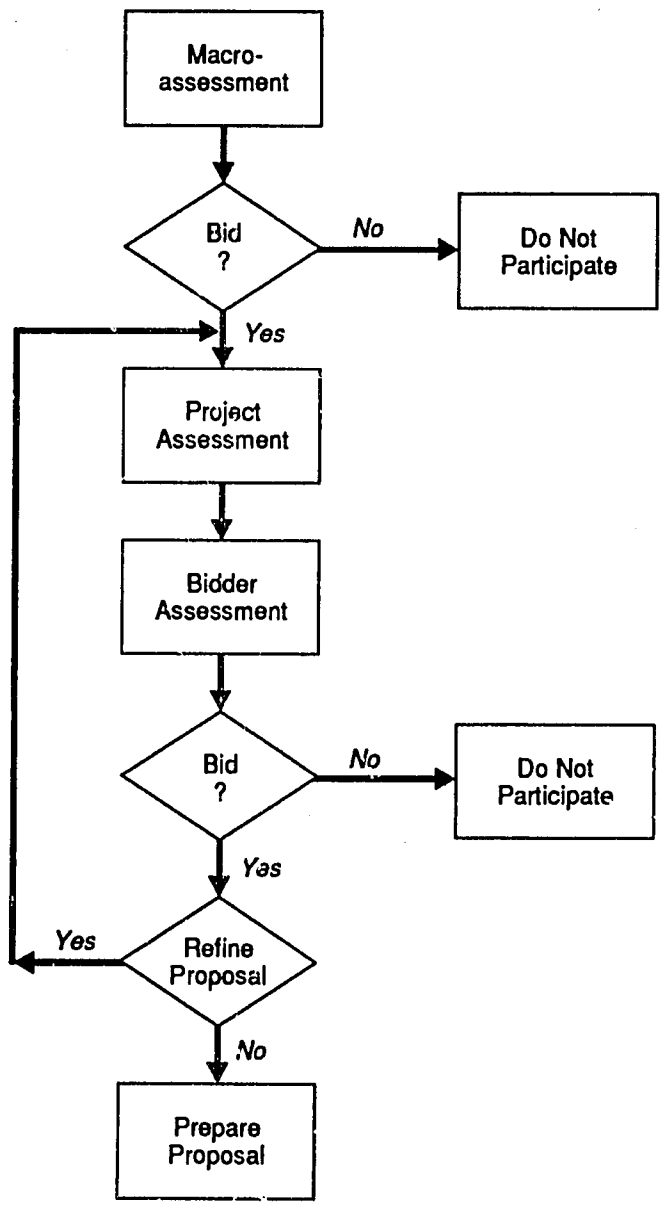

Figure 1 Private Sector Decision Model

- **Project Assessment.** A project assessment deals with the project-specific elements of a business opportunity. These include policy and its implications for financial and commercial viability as well as bid award and project development issues. NAPOCOR's policy and program design as communicated in its RFPs will be the basis for conducting project assessments.
- **Bidder Assessment.** Any project opportunity must be viewed in light of the competing bidders for the project. Competition between three to four credible, experienced bidders provides a reasonable probability of bidder success and ensures commercially and financially viable proposals.

The time and expense of bid preparation cannot be justified by credible bidders unless there is a reasonable probability of bid award. If there are fewer than three or four bidders, it can be an indication that the terms of the bid have discouraged credible bidders. A situation in which there are more than three or four bidders is beneficial to NAPOCOR if the bidders are credible, but could also be an indication the bidding process has encouraged irresponsible bids. Such a situation lowers the perceived chances of success by credible bidders and discourages their participation in the future.

Figure 2 shows potential private sector participants in a limited recourse private power project. Because financing for a project cannot be closed and implementation cannot begin until all project contracts are finalized, NAPOCOR must be aware of the decision processes of each project participant. While NAPOCOR will deal with sponsors directly, its policies will also affect the risks perceived by lenders and investors.

The power privatization models that have evolved in the United States and Europe provide examples of how private industry can participate in the power sector. It is important, however, to recognize that these models evolved in environments considerably different from the environment existing in the Philippines today. For example in the United States, the existing privatization models are aimed at increasing competition in a sector that has always been largely private. NAPOCOR faces many more obstacles. These include:

- **External Constraints.** Constraints that reflect perceptions of country risk and that are generally beyond influence in the short-term. These risks may include perceptions of political

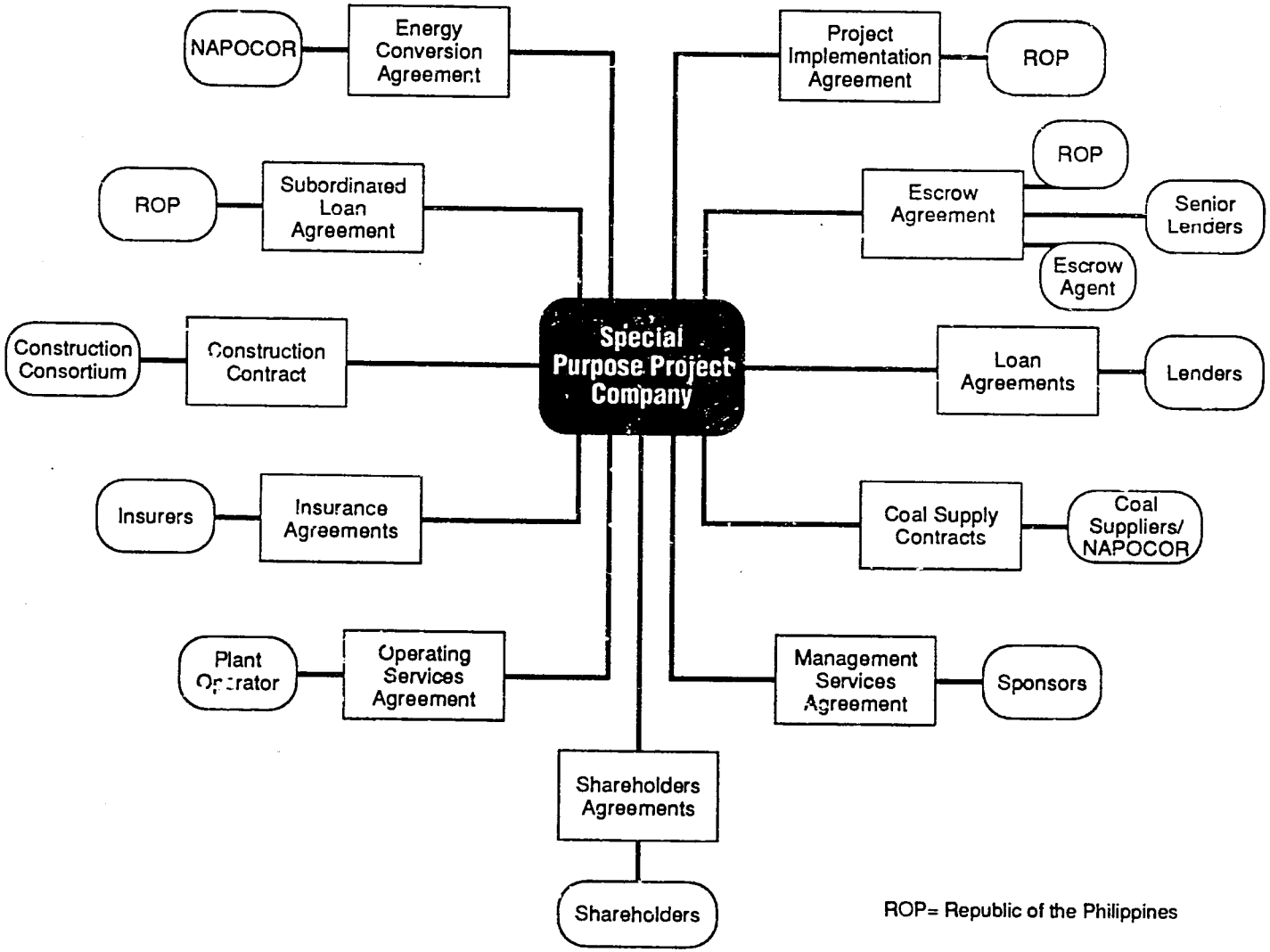

Figure 2 BOT Power Project Contractual Structure

and economic instability, perceived difficult business climate, limited availability of foreign exchange, and limited commercial bank lending capacity for the Philippines. These factors are generally incorporated in a project participant's macroassessment of a project opportunity.

- **Policy Constraints.** Policy-engendered constraints that are reflected in enabling legislation and implementing rules and regulations, including limits on sovereign guarantees and credit support, pricing limitations, and incentive mechanisms (e.g., exemption from customs duties and taxes).
- **Program Constraints.** Program-engendered constraints that are reflected in NAPOCOR's RFP and the "BOT Energy Conversion Agreement," including the absence of a clearly defined approval and permitting process, an unbalanced risk/reward profile, and excessive bonding requirements.

NAPOCOR has little effect on the external constraints; however, it can work with other government bodies to modify policy impediments to private investment in power. Although program constraints are largely self-imposed, they often reflect national policy.

Government power privatization objectives, implementation constraints, and participant decision models can be integrated in a power privatization framework. A simplified version of the government power privatization framework is shown in Figure 3. The framework developed for NAPOCOR starts with a hierarchical ranking of government objectives and then examines the likelihood of realization by filtering assumptions through project participant decision models. Using project participant decision models, NAPOCOR can identify constraints that must be addressed either through accommodative policy or program redesign. This approach is used for both new facilities such as BOT projects and privatization approaches involving transfer of existing NAPOCOR assets.

A viable privatization structure, supported by government policy and program design, can then be effectively marketed to prospective private sector project participants in a redesigned RFP. In addition to a viable project structure and supporting policy, the RFP will communicate a well-designed bidder prequalification process intended to select three or four credible bidders, a transparent and

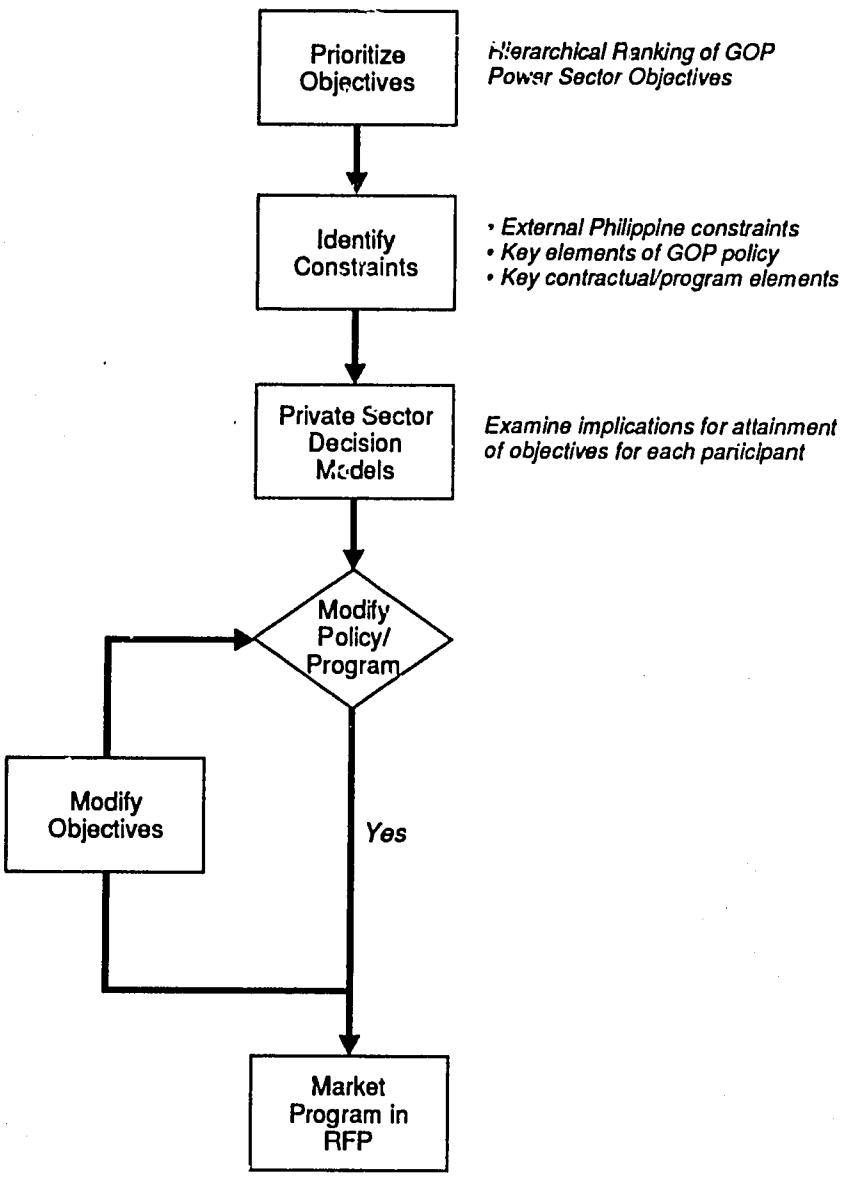

Figure 3 Power Privatization Framework

systematic evaluation methodology, and a well-defined approval and permitting process in which the government shares the risks for implementation delays that are reasonably within its control.

A RECOMMENDED PROGRAM STRUCTURE

Although government policy suggests its objective is a dynamic private power industry in which there are many active and credible private sector participants competing with NAPOCOR to supply Philippine power demand, external constraints argue for a gradual transition to this ideal. The transition would require a phased program concentrating on the development of high-priority projects identified in NAPOCOR's resource plan and industrial power (captive power) projects that primarily provide power for their industrial host company, but can also sell excess power to the NAPOCOR grid. Key considerations in designing a successful private power program structure are:

- The government's BOT program should be implemented in a coordinated manner by prioritizing projects in different sectors such as roads, ports, and power projects. Sequential implementation will provide lenders and sponsors assurance that the necessary commercial bank financing can be secured for projects.
- NAPOCOR's power program should concentrate on those projects identified as part of its resource plan and captive power projects.
- NAPOCOR's resource plan should be implemented through the parallel development of NAPOCOR owned and operated projects, NAPOCOR owned and privately operated projects (BTO) and privately owned and operated projects (BOT/BOO).
- NAPOCOR should work with other government agencies to develop power sector objectives.
- The piecemeal privatization of NAPOCOR through the sale of its existing power projects is unlikely to appeal to the private sector unless NAPOCOR's best projects are offered for sale. This may leave NAPOCOR with a collection of old, inefficient, high cost plants.
- If the private sector is to operate existing power projects, its participation should be on a management contract or similar basis that requires limited initial investment by the private sector and provides strong incentives for improving plant performance.

REQUIRED POLICY MODIFICATIONS

To achieve the government's power sector objectives may require modifications to existing policy, including:

- In addition to guaranteeing the availability of foreign exchange, the government should guarantee the performance of all governmental entities that are parties to private power contracts.
- The government should provide limited credit support to the project, including a guarantee of project completion. Cost overruns should be financed from a project standby financing facility and thereafter by the government. The power tariff would be adjusted upward to the extent that cost overruns were attributable to force majeure or government default. The power tariff would not be adjusted in instances of project sponsor default (a portion of power revenues would repay the government and sponsor equity cash flows be decreased accordingly).
- The government should guarantee to make power payments when disputes are pending and during instances of force majeure (including fuel supply interruptions if NAPOCOR is supplying fuel).
- The government should authorize the limited use of debt/equity swaps to facilitate the development of a private power market. Debt/equity swaps should be limited to a prespecified percentage of project capitalization.
- The government and NAPOCOR would commit to a milestone schedule for providing necessary approvals and government scope of services. The government's scope should include fuel supply (up to the project boundary or as otherwise specified in the RFP if NAPOCOR is the fuel supplier), utilities (up to the project boundary or as otherwise agreed in the RFP), and facilitating necessary permitting (since these projects are identified in NAPOCOR's resource plan).
- Until NAPOCOR's BOT program is well established, BOT power projects should be designated pioneer status and so communicated in RFPs. This status entitles the project to exemptions from certain import duties and taxes and was granted to the Navotas project.

REQUIRED PROGRAM MODIFICATIONS

A number of modifications to the existing program are required to achieve continuing success in implementing power BOT projects. These are:

- NAPOCOR should develop a ceiling price for power purchases from projects identified in its RFPs. This ceiling price would reflect NAPOCOR's cost of power if it was to build and operate a plant itself (as reasonably modified to reflect differences in taxes and duties).
- NAPOCOR should develop prices and policies that accommodate the development of captive power in its electric service territory, including a standard power purchase contract and power pricing; backup power methodologies. Wheeling methodology and rates should be developed in anticipation of the next phase of program development.
- Proposal/operating bonding requirements should be limited to what is reasonable and consistent with commercial standards.
- Power pricing should be tailored to the underlying cost structure. This would ensure that pricing contingencies are minimized and that NAPOCOR receives the lowest present value power pricing over the cooperation period. Under this structure, capacity payments would consist of a debt service component that varies as a function of periodic debt service, a level equity servicing component, and variable operations and maintenance components. The proposed level of these charges would be supported by appropriate bidder exhibits included in the bidders' proposal.
- There should be a balanced risk/reward profile with equity cash flows increasing or decreasing proportionately with performance above or below a defined performance band (which would also be structured so as to preserve a balance in risk and reward). Additionally, performance should be paid for on a rolling average basis with average performance over a 3-month period being the basis for compensation.
- Project sponsors and the government should jointly commit to a development milestone schedule. The government should share the cost of additional expenses reasonably attributable to its actions or failures to act.

- NAPOCOR's RFP should communicate its prequalification process. Three or four prequalified bidders would be identified. Proposals should be subjected to a force ranking system that allocates points to different aspects of a proposal, consistent with NAPOCOR and government preferences. The evaluation would be self-scoring (subject to NAPOCOR verification and supporting documentation) and included in the RFP package.
- NAPOCOR should publish a schedule for bidding, bid evaluation, and contract negotiation.

A viable, cohesive power privatization program can then be communicated in redesigned RFPs that include:

- A clear statement of all government BOT policies in support of this project.
- A statement that all projects conforming to the consensus BOT model will be deemed to be preapproved, subject to satisfactory agreement of the BOT Energy Conversion Agreement.
- The permitting process standardized to the extent possible and any site-specific or project-specific permitting communicated in the RFP. Permitting requirements should be no more onerous than those for public sector projects (World Bank or other appropriate standards).
- Technical specifications that are performance-based, which will facilitate lower cost, credible proposals.
- Project evaluation that is systematic and transparent. A forced ranking evaluation methodology should be included in the RFP.

POWER BOT PROGRAM IMPLEMENTATION

Regardless of its final form, the Philippines power privatization program must be an internally consistent set of policy and program guidelines consistent with external constraints. Because private power projects have implications that extend beyond that of power supply, policy and program formulation must reflect a consensus view of government agencies.

As a first step in developing an effective private power program, the government must create a power privatization working group: the Private Power Policy Group. This group will consist of senior representatives from NAPOCOR, the Department of Finance, the National Economic and Development Authority, and the Office of Energy Affairs to design an achievable program. Special advisors

will be used as needed, including representatives from the Department of Environment and Natural Resources and the private sector. Private sector advisors will provide an essential private sector perspective and should include an external financial advisor and others experienced in power project development.

Once this Private Power Policy Group is established, it will need to take the following steps to develop an achievable program:

- Develop objectives for the power sector to guide the Power Policy Group in assessing the effectiveness of private power policy and program design.
- Assess the current power program for its ability to satisfy power sector objectives.
- Compare the current Philippines program with competing programs in ASEAN and with other developing programs. The Philippines program must be at least as attractive (and probably more attractive) than competing programs.
- Recommend policy and program modifications as required to attract wider private sector participation in furtherance of power sector objectives. Recommended policy modifications will be submitted to the appropriate governmental agency for legislative consideration and action.
- Modify NAPOCOR's request for proposals to incorporate recommended program changes, and other changes that do not require policy modifications.
- The Policy Group will reconvene as required to assess the effects of policy modifications and incorporate them in the RFP.

In parallel with the above process, actions can be taken to improve NAPOCOR's effectiveness in implementing the existing program. Similar to most utilities, NAPOCOR has been organized to effectively carry out its primary functions: power generation, power transmission and power distribution. While this structure can accommodate private power development on an ad hoc basis, the implementation of a widespread private power program will require an organization which facilitates this objective. NAPOCOR's private power program should be implemented on the following basis:

- A reconstituted private power group within NAPOCOR will be responsible for implementing the government's private power program. It will be comprised of three subgroups

under the direction of a senior vice president, who will be accountable to the NAPOCOR board of directors. The private power groups will be: a contracts group responsible for developing and modifying standard private power contracts in support of NAPOCOR private power initiatives; a commercial group, having primary responsibility for obtaining necessary NAPOCOR project approvals, proposal evaluation and contract negotiations; and an environmental/ permitting group, responsible for developing permitting requirements for private power projects (this group may be a specially designated team with DENR, or a NAPOCOR team designated to work with a private power team within DENR).

- Privately owned and operated projects should be structured as either BOT/BOO projects or captive power projects.
- NAPOCOR's BOT/BOO program should concentrate on projects with total costs in the range of $150 to $300 million. Larger projects can continue to be implemented on an ad hoc basis; smaller projects usually cannot justify the level of development effort and expense required for BOT/BOO projects.

Many Southeast Asian nations are embracing the promise of power privatization. While the Philippines has generally been at the forefront of this movement, its program will will have to compare favorably with those in neighboring countries if it is to have any hope of successfully attracting limited development capital. To regain program momentum and reestablish program credibility NAPOCOR must assume a proactive role and market its "new" program to potential private sector participants.

A revamped program, actively marketed to the private sector, is the required catalyst to revitalize the power sector in the Philippines.